



# ISM/Safety Improvement Monthly Project Review

*Status Period: 06/01/06 – 07/31/06*

<http://www.bnl.gov/qmo/ISM.asp>

## **ISM/Safety Improvement Project Summary**

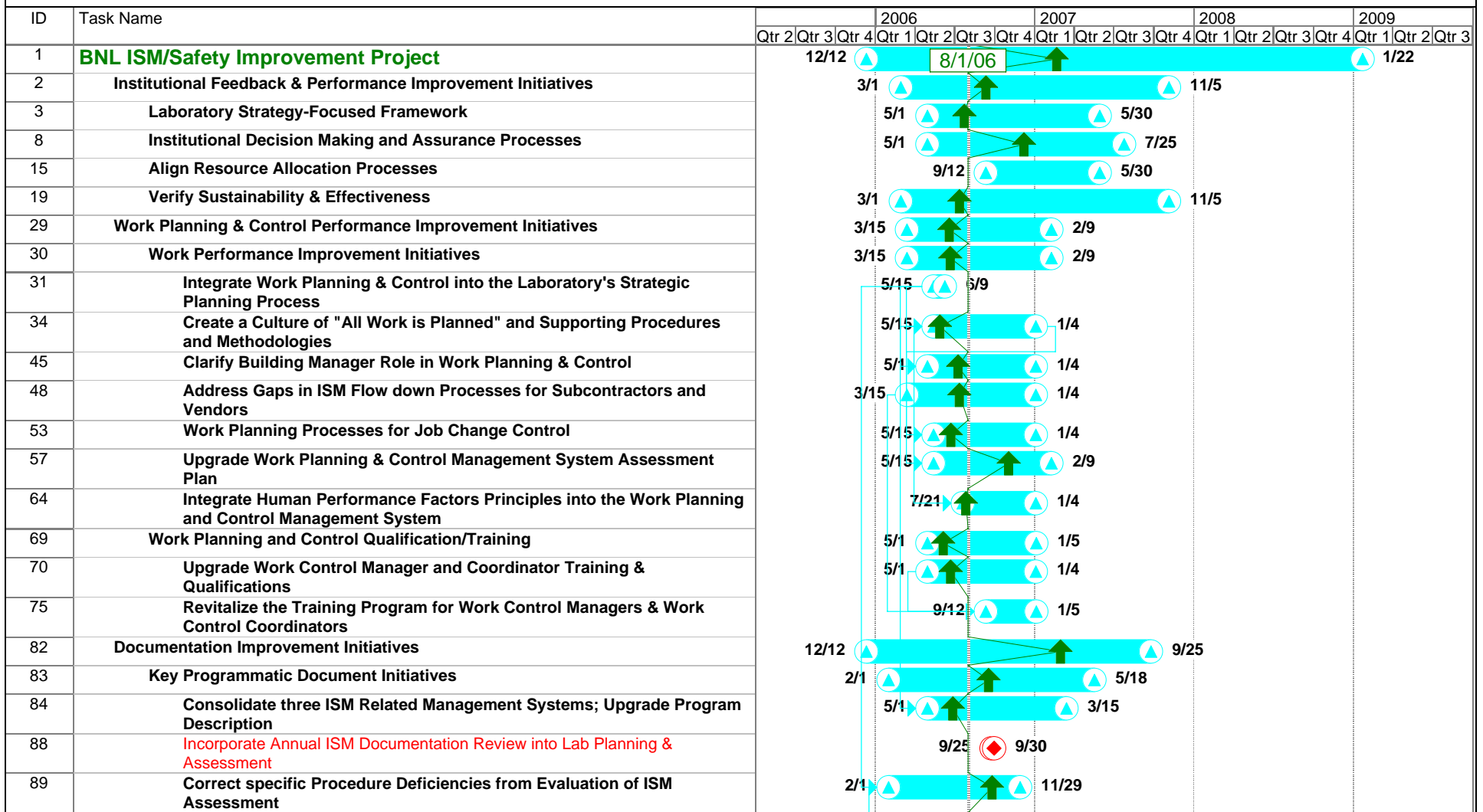
As of August 1, 2006, the ISM/Safety Improvement Project is 34% complete. The Work Planning and Control Performance Improvement Initiatives and Arc-Flash incident activities are progressing slowly and are slightly behind on the baseline schedule. Efforts to get these activities back in line with the baseline schedule are underway.

The Gantt chart on the following three pages illustrates project progress in relation to the review date of August 1<sup>st</sup>. The green arrows show where we are vs. where we should be in relation to the review date. Green arrows to the right indicate that the activity/deliverable is ahead of schedule and/or progressing as planned. Arrows to the left indicate that the activity/deliverable is behind schedule and additional effort may be required to get the activity/deliverable back on track.

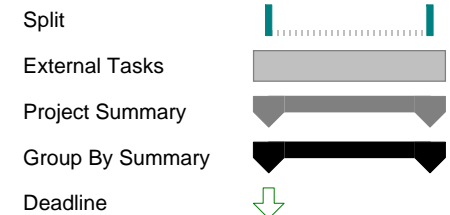
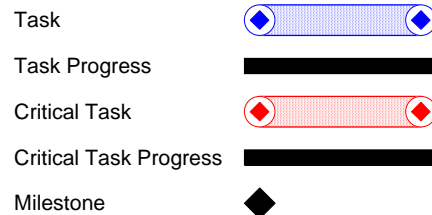
### **June and July Completed Activities:**

1. WBS 1.4.1 Comprehensive gap analysis against key program design input requirements and expectations.
2. WBS 2.1.1 Integrate Work Planning and Control into Laboratory's Strategic Planning Process.
3. WBS 2.1.4.1 Supplement existing ISM requirements flowdown into procurement processes (i.e. small contracts, service work, and warranty work)
4. WBS 2.1.4.2 Modify contract, purchase order, and supplier terms and conditions.
5. WBS 2.2.1.1 Review current training and qualification requirements for Work Control Managers and Work Control Coordinators (overhaul of the training program and requirements is underway)
6. WBS 3.1.3.2 Specific procedure/documentation deficiencies from the Evaluation of ISM Assessment were communicated to applicable Management System Stewards, Points of Contact and/or Subject Matter Experts. Notices of Intent were developed and submitted to the SBMS Office. All deficiencies are scheduled to be addressed by the end of FY06.
7. WBS 3.1.5.1 SBMS guidelines were revised to incorporate a requirement that all roles and responsibilities in any SBMS document be summarized in the management system description.
8. WBS 5.1.1 DOE Type B Interim Recommendation – PPE and Dress for Electrical Hazard Categories'
9. WBS 5.1.2.1 Review current procedures to evaluate whether the practice of racking circuit breakers into live bus should be continued.
10. WBS 5.1.2.2 Benchmark practices for MCC bucket insertion/removal
11. WBS 5.1.4.1 Electrical and Mechanical forensic analysis to determine what caused the arc-flash event.
12. WBS 5.1.4.2 Design electrical protection systems based on the understanding of the technical cause.
13. WBS 6.6 Inadequate Control of Procedures PAAA Non-conformance (SBMS Documents and Internal Controlled Procedures subject area updates/revisions).

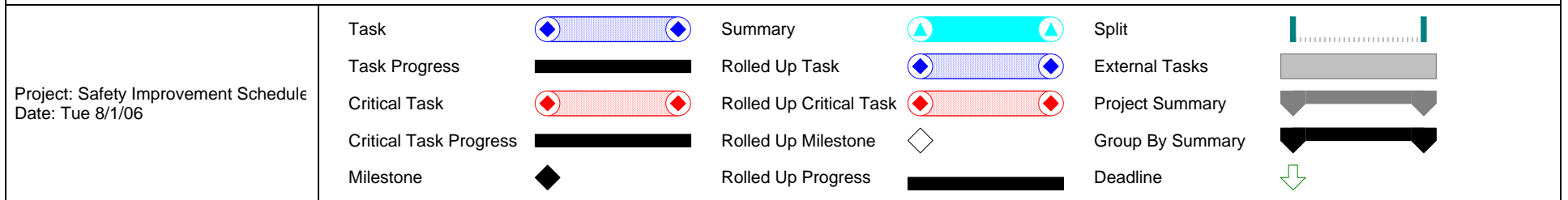
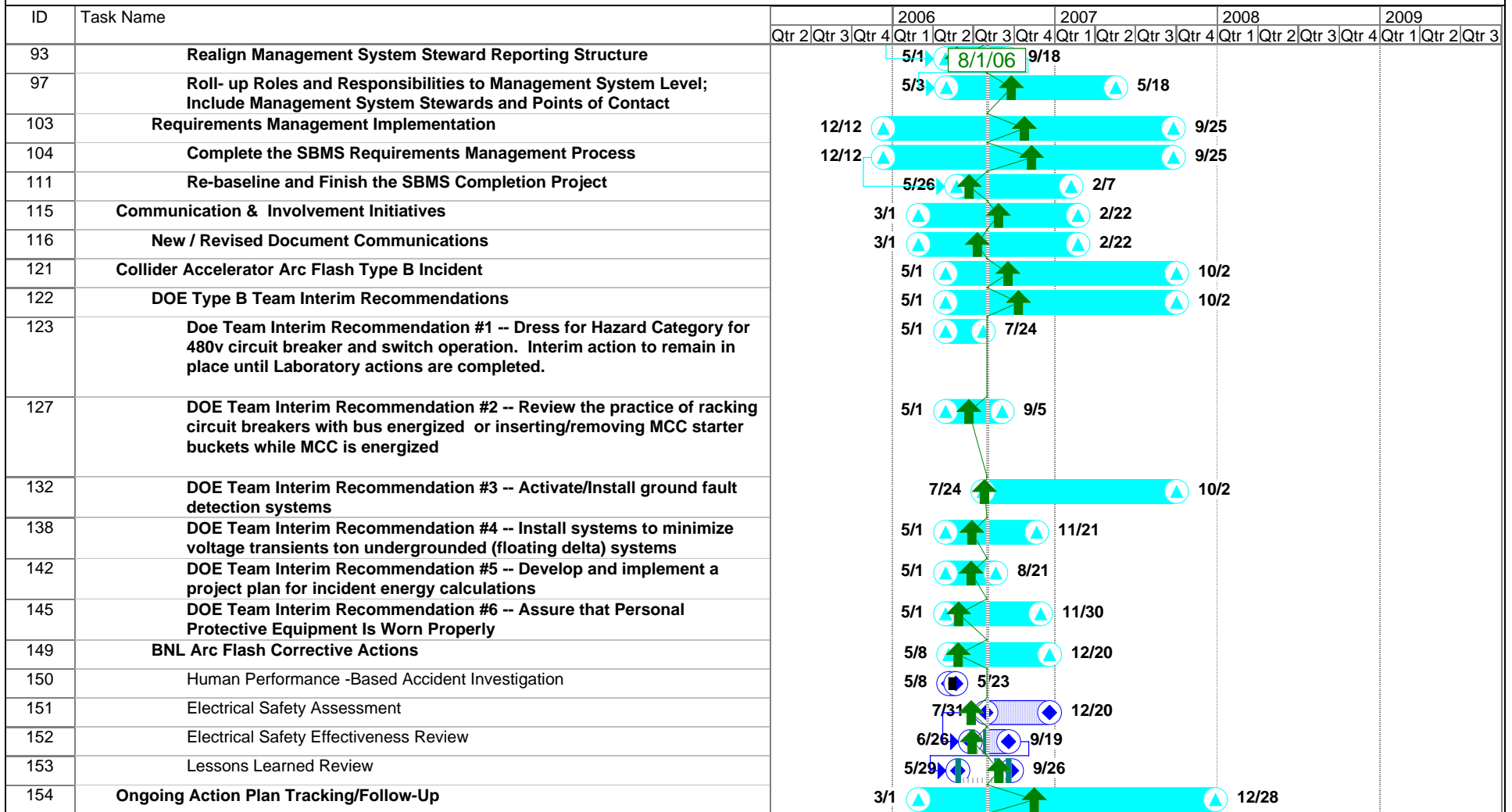
# BNL ISM/Safety Improvement Project Plan (ATS# 2944)



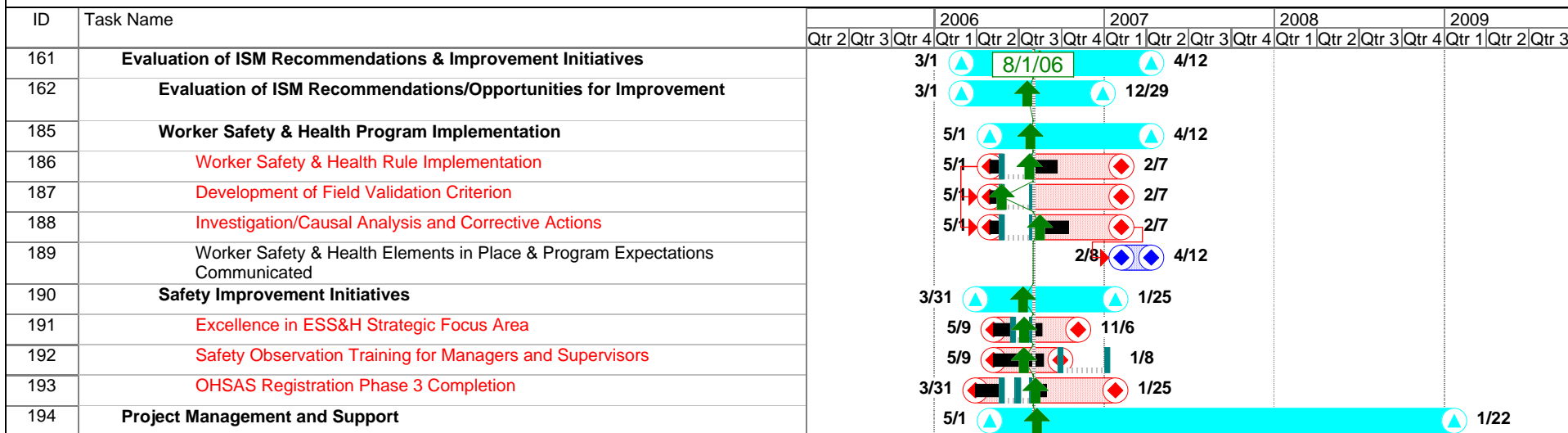
Project: Safety Improvement Schedule  
Date: Tue 8/1/06



# BNL ISM/Safety Improvement Project Plan (ATS# 2944)



# BNL ISM/Safety Improvement Project Plan (ATS# 2944)



Project: Safety Improvement Schedule  
Date: Tue 8/1/06



## Monthly ISM Performance Improvement Project Status Report #3 (July 2006)

|   |                |  |   |
|---|----------------|--|---|
| <b>Project Manager:</b> Steven Coleman  |                | <b>Project Status Period:</b> June 1 – July 31, 2006 |   |
| <b>Project No.</b> ATS 2944   |                | <b>Account No.</b> 19570                             |   |
| <b>Project Sponsor:</b> Mike Bebon, Deputy Director for Operations  |                | <b>% Complete:</b> 21%                               | <b>Previous Month % Complete</b> 33%    |
|   |                | <b>Date:</b> 7/31/2006                               | <b>Report No.</b> 3                     |
| <b>Budget/Cost Status</b>   | <b>FY 2006</b> | <b>FY 2007 Estimate (E)</b>                          | <b>This Period</b>                      |
| <b>Total Estimated Costs</b>  | \$420K         | <b>\$550K (E)</b>                                    | <b>Current Month Actual Costs</b> \$33K |
| <b>Costs to Date</b>  | <b>\$221K</b>  | <b>N/A</b>   |   |
| <b>Balance Available</b>  | <b>\$199K</b>  | <b>N/A</b>   |   |
| <b>Project Progress:</b><br><b>WBS 1.0 – Institutional Feedback and Improvement Initiatives</b> <ol style="list-style-type: none"> <li><b>WBS 1.1 → Laboratory Strategy focused framework.</b> Solid progress was made in defining the strategic focus areas and developing the Annual Lab Plan. <ol style="list-style-type: none"> <li>The first draft of the SFAs goals and objectives was completed and forwarded to appropriate Managers for review and comment.</li> <li>An Integrated Planning and Assessment Calendar was developed and is currently being refined. Publication and implementation is scheduled for the 4<sup>th</sup> quarter (September 06).</li> <li>Re-alignment of the quarterly Institutional level reporting is progressing on schedule. The Policy and Strategic Planning Office (P&amp;SP) and Deputy Director for Operations reviewed and commented on the draft mapping of Management Systems to SFAs, all comments have been addressed. Management System risk level determination guidance has been developed. Performance Evaluation Measurement Plan (PEMP) goals, objectives, measures and targets, and contract measures were also mapped to SFAs.</li> <li>Human Resources Training Department has begun working on defining and implementing a management symposia. Initial resource estimates are steep. They are working on an alternate approach</li> </ol> </li> <li><b>WBS 1.2 → Institutional Decision Making and Assurance Process.</b> The contractor assurance process is defined and documented in the Integrated Assessment Program Management System and Quality Management Program Description. <ol style="list-style-type: none"> <li>The QM Program Description was forwarded to DOE for review and approval.</li> <li>Event/Issues (E/I) Management process development and implementation is progressing in accordance with the established schedule. The draft E/I management flowchart and improved process was reviewed and commented on by a diverse group of BNL staff. The revised E/I management processes strengthen implementation and ensure the consistent capture, classification, analysis, and management of safety deficiencies. Training on causal analyses (Five Whys and Barrier Analysis) was also provided to over 60 BNL Managers and/or supervisors. As part of the E/I process, a Significance Category BNL will be employed, which is aimed at capturing the low level issues at do not raise to ORPS/NTS Reportability.</li> <li>The Assessment Tracking System (ATS) was upgraded to include (1) a way to indicate that Independent Verification/Effectiveness of a closed action is required prior to closure, (2) a drop down field that allows for selecting the</li> </ol> </li> </ol> |                |  |   |



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priority of the action (this feature will be activated when the Institution defines the prioritization framework), (3) a drop down list for coding safety deficiency items (better support tracking & trending), (4) A drop down box for administrators to track the number of due date extensions.

3. **WBS 1.4 → Verify Sustainability and Effectiveness.** A comprehensive gap analysis against key program feedback and improvement input requirements was completed. The analysis showed that, in general, our current plans are consistent with the expectations of the DOE and should provide a solid foundation for sustained management and on-going enhancement of assurance and improvement processes. The review did however identify one area related to qualifications for individuals conducting assurance activities. As part of this project, contractor assurance roles and qualifications will be established, and a new activity will be added that “Establish and implement a process to verify personnel responsible for managing and performing assurance activities possess appropriate experience, knowledge, skills and abilities”.
4. The Inspection of ES&H Programs at the Savanna River Site Report was forwarded to BNL Level 1 and Level 2 Managers for lessons learned applicability. The findings and opportunities for improvement are being reviewed against BNL ISM/Safety Improvement Project activities; gaps, improvements and/or new activities will be incorporated into the project plan.

### WBS 2.0 – Work Planning and Control Performance Improvement Initiative

1. **WBS 2.1.1 → Work planning and control initiatives** have been integrated into the Laboratory’s Strategic Planning process. These initiatives have been incorporated into the Performance Evaluation Measurement Plan (PEMP). Excellence in Environment, Safety, Security and Health (ESS&H) strategic focus area has been established, and work planning and control is a major objective in this SFA. The WP&C Management System point of contact is assigned to the ESS&H SFA.
2. **WBS 2.1.2 → All Work is Planned** – The screening guidelines for work planning and control were revised to more clearly articulate hazard analysis requirements. The WP&C point of contact met with Laboratory Work Control Managers to assist in defining Worker Planned Work and skill of the worker determinations. Defining worker planned work and the processes to be used are on going and progressing slowly.
3. **WBS 2.1.3 → Clarify the Role of Building Manager --** The pilot on Building Manager notifications is complete. Changes to the process include the following: The Building Manager will be notified anytime work is performed in their respective facilities. The Building Manager is the prime contact and must know when to get Work Control Managers/Coordinators involved. A workshop with Building Managers to finalize the building managers role in work planning and control is scheduled for the 4<sup>th</sup> quarter (September 1, 2006).
4. **WBS 2.1.4 → ISM Flowdown Contractors and Suppliers** –Light Source and procurement and property management lead and effort to modify the existing process. The revised process requires that all web requisitions that require work to be performed on site require a mandatory review by the department/division work control manager/coordinator for work control requirements. A controlled list of work control managers, coordinators and experimental safety review personnel will be included in peoplesoft and used to validate future web requisitions. The revised process is expected to go live in the 4<sup>th</sup> quarter FY 06.
5. **WBS 2.1.7 → Human Performance Initiatives into WP&C** – The lab has partnered with Fischer Technologies a human performance expert to help us integrate human performance principles into work planning processes. The review will include defining human

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performance questions to be used in pre-job briefings.

### WBS 3.0 – Documentation Improvement Initiatives

1. **WBS 3.1.3 – Correct specific procedure deficiencies from the Evaluation of ISM** – Procedure and documentation deficiencies were identified and assigned to management system owners, points of contact or subject matter experts. Responsible personnel submitted Notice of Intents (NOIs) for procedure and documentation revisions. All procedure/documentation deficiencies specific to organizations will be revised/updated in the 4<sup>th</sup> quarter (September 2006)
2. **WBS 3.1.4 → Re-align Management System Reporting Structure** – To increase accountability and ensure an appropriate balance management system stewards and line priorities, Management System Stewards now report to their line managers. Standards Based Management System (SBMS) documentation was revised to reflect the new reporting relationship. Revision of R2A2s is scheduled for the 1<sup>st</sup> Quarter of FY 07.
3. **WBS 3.1.5 → Roll-up Roles and Responsibilities to Management System Level** – All SBMS documents were reviewed to identify all management system steward roles and responsibilities. The management system responsibilities were summarized by position. SBMS Internal Controlled Procedures and SBMS Documents subject area was revised to include a requirement that all roles and responsibilities are summarized in the respective management system. Updating management systems with roles and responsibilities, and R2A2 revisions are underway, and scheduled for completion in the 1<sup>st</sup> quarter FY07.
4. **WBS 3.2.1 → Requirements Verification** – Software tools have been developed to facilitate and document the verification of requirements. A pilot test for the electronic record of decision software tool was completed. The Quality Office is summarizing test feedback and modifying the electronic software tools.
5. **WBS 3.2.2 → Re-baseline and finish the SBMS Completion Project** – The Quality Office met with Management System Stewards, Points of Contact, and Subject Matter Experts to secure contributed resources and to obtain firm commitment dates on updating all SBMS Documents. The project plan is being updated and initial implementation is scheduled for the 1<sup>st</sup> quarter of FY07.

### WBS 4.0 – Communication and Involvement Initiative

1. **WBS 4.1.3 → Operations Forum Evaluation/Implementation** – The forum chair and co-chair have been selected. A pilot ops forum was conducted in early July. Feedback is being summarized and analyzed for applicability. The Ops forum implementation is scheduled for implementation in the 1<sup>st</sup> quarter of FY 07.
2. A draft communication plan and assessment plan for the upcoming DOE ES&H Evaluation has been developed with the assistance of an external subject matter expert (Carol Sohn). Finalization/Initial implementation is scheduled for the 4<sup>th</sup> quarter of FY06.

### WBS 5.0 – Collider Accelerator Arc Flash Type B Incident

1. **WBS 5.1 → DOE Type B Assessment Recommendations**
  - a. The Laboratory Electrical Safety Committee (LESC) reviewed NFPA 70E Standards and has recommended that the interim measures relating to specification of PPE for switching and working On or Near as shown in Appendix VIII of ES&H Standard 1.5.0 remain in effect permanently. The electrical safety subject area appendix VIII, Personal Protective Equipment (PPE) was



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- revised to include the new requirements approved by the LESC.
- b. BNL reviewed and benchmarked practices and electrical operations with several sites and organizations (DOE Electrical List Server, IEEE Safety Forum, and DOE Facility Managers)
  - c. The LESC recommends that the practice on inserting/Removal of MCC buckets and racking in/out of switchgear breakers be allowed, but only under certain conditions including management review of the necessity, via a energized work permit, and use of proper PPE selected by performing an arc-flash calculation. Arc-flash incident energies that exceed 40 cal/cm<sup>2</sup> will not occur (consistent with NFPA70E requirements). This situation is likely to occur in all cases where switchgear does not have a main breaker; these operations will require far more building or partial building shutdowns than under our current practices. Solutions to this are available and should be investigated where this would pose operational problems. We believe this effort is part of performing the arc-flash calculations and the resulting recommendations for system improvement.
  - d. The electrical and mechanical forensic analysis is nearing completion. The switches were thoroughly examined and disassembled. Switches of similar construction across the complex were also disassembled and tested. There was evidence of an arc to ground. There were mechanical defects and cracking found on all similar switches examined at C-AD. General Electric is presently testing the switches independently.
  - e. Collider accelerator Department (C-AD) reviewed the status of ground fault indicating relays to verify that they are appropriately set and connected to an alarm monitoring system. 75% of the equipment needed to upgrade the protection systems has been procured (High resistance grounding will be employed at the Laboratory.) Balance of plant review is in process and expected to be completed by the end of the 4<sup>th</sup> quarter (Sept 06). Installation/Connection and/or correction of alarm monitoring relays are underway and are scheduled to be complete for C-AD by August 31, 2006. Balance of Plant completion on schedule for March 07.
    - i. Remote ground fault monitoring with alarming capability will be added to all C-AD substations. All 400 ampere GE Spectra Series Fuse disconnect switches will be replaced. All other C-AD GE Spectra Series disconnect switches will be examined during the next shutdown.

### WBS 6.0 – Ongoing Action Plan Tracking and Follow Up

1. ***Material Handling Hoisting and Rigging Action Plan*** – There are 5 action items open, two of the five (1) Document initial receipt inspection of equipment, and (2) Documentation Configuration Control action items are progressing slowly and are slightly behind schedule.
2. ***Industrial Hygiene Action Plan*** – The Safety and Health Services Division (SHSD) prepared an Industrial Hygiene Service Delivery model for the Laboratory. The IH Service Delivery requires a considerable amount of dedicated resources. The ESH&Q ALD is currently meeting with BNL Senior Managers to discuss risks and path forward for the IH Monitoring Program.
3. ***Inadequate Control of Procedures*** – The SBMS Documents and Internal Controlled Procedures subject areas were revised to include a frequency requirements for periodic reviews, clarify what constitutes a periodic review, and to provide guidance on when and how to develop an institutional and/or internal controlled procedure. This action addressed the PAAA programmatic deficiency in procedure control. Workshops are scheduled to be held with Management System Stewards, Point of Contact, and Subject Matter Experts in the

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4<sup>th</sup> quarter of FY 06.

### WBS 7.0 – Evaluation of ISM and Safety Improvement Initiatives

1. **WBS 7.1.6 → Nuclear Safety Authorization Readiness** – BNL in coordination with BHSO verified implementation and compliance with 10 CFR 830, Nuclear Safety Management. There were no findings associated with this verification, however, there were several observations noted. BNL addressed all observations, they include the following:
  - a. The Nuclear Safety Charter was revised to clarify their roles and responsibilities for nuclear safety.
  - b. The Roles and Responsibilities of BNL's Nuclear Safety Officer (NSO) was clarified/updated to require the NSO to perform an institutional level nuclear safety review of all nuclear and former nuclear facility Authorization Basis Documents.
  - c. Unreviewed Safety Question Determination (USQD) training was provided to managers and staff responsible for nuclear facilities (including those downgraded to radiological facilities.)
2. **WBS 7.1.7 – Operating Experience/Lessons Learned** – Expanded the distribution of lessons learned communications to include all BNL staff with Email addresses (in the past only those subscribed to the program received lessons learned). Positive feedback received on the expanded distribution. BNL also adapted to the DOE model for tracking and trending (i.e. for reading only, distributed for information, will adopt, etc.). Plans are underway to determine the process for measuring effectiveness of lessons learned adapted by organizations (i.e., departments/divisions).
3. **WBS 7.2 Worker Safety & Health Program Implementation** – Gap analyses for 13 functional areas (i.e., Biological safety, Fire safety, industrial hygiene, pressure vessel, etc) were completed.
  - a. A Worker Safety and Health Working Group was established. Results of gap analyses are being presented to the working group. The working group will identify and recommend required variances to BNL Senior Management.
  - b. BNL participated in conference calls and meetings with other DOE Labs on preparation and implementation of 10CFR851 requirements.
4. **WBS 7.3 Safety Improvement Initiatives** – Safety Management Leadership and Observation Process training was provided to Level 1, II and III Managers.
  - a. A database was created to capture and trend information collected from management observations. Performance expectations are being developed for each directorate.
  - b. The DuPont STOP Training Program, which trains line supervision to skillfully observe people as they work, was extended to all Facilities and Operations (F&O) organizations (staff services, plant engineering, safeguards and security, and emergency services divisions.
  - c. The ESH&Q Directorate implemented an Employee Recognition Program for Safety Awareness (“Superior Safety Steward” – S3). Recognizes outstanding awareness and corrective actions on health and safety issues. S3 selection criteria can be accessed [http://www.bnl.gov/esh/shsd/ohsas/s3\\_Criteria.asp](http://www.bnl.gov/esh/shsd/ohsas/s3_Criteria.asp).
5. **WBS 7.3.3 – OHSAS Registration Phase 3** – Seventy-five percent of Job Risk Assessments have been completed for Phase 3 Organizations (Life sciences, EENS, and other support organizations that report to the Directors office. The quality of developed JRAs is currently under review, actions required to assess the quality will be incorporated into the ISM/Safety Plan.

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### **Risk Assessment/Emerging Risk:**

1. Material Handling and Hoisting and Rigging corrective action activities. ATS # 1948.2.1 – Documented Initial Receipt Inspection of Equipment, and ATS # 1948.6.1 – Documentation Configuration and Control. Recent events indicate that incidental material handling activities across the complex may need to be investigated.
2. Industrial Hygiene Baseline Monitoring is a concern, and could to the upcoming DOE ES&H Evaluation at BNL, and compliance to 10 CFR 851, Worker Safety and Health rule requirements. Several action items (ATS 2823) are contingent upon the service delivery model and remain overdue.

### **Corrective Action(s)**

1. A meeting with Material Handling and Hoisting and Rigging action owners is scheduled for early in the 4<sup>th</sup> quarter of FY06 to discuss completion of the action items, and to determine if additional resources is required to complete the action items. The outcome of this meeting will determine the path forward and/or revised completion date for these action items.
2. The ESH&Q, ALD and Safety and Health Division Manager are reviewing delivery model alternatives and plan to meet with the BNL Policy Council for their approval on the delivery model and required resources needed to support the IH Service Delivery Program. Final decision is expected in the 4<sup>th</sup> Quarter of FY 06. A meeting will be held with IH action item owners to discuss the status of these action items, and to attain realistic target completion dates.

### **Change Control/Status of Changes:**

1. Gap Analysis identified a need to Establish and implement a process to verify personnel responsible for managing and performing assurance activities. This new activity was added to the project plan.
2. To support the revised Event/Issues Management initiative, training on the Five Whys and Barrier Analysis for managers, supervisors and selected staff will be incorporated into the project plan.
3. Work Planning and Control initiatives were clarified to more clearly define/articulate “Worker Planned Work” activities.

### **Lessons Learned:**

None

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| ID | WBS        | Task Name  | % Complete | Actual Start | Baseline Start | Actual Finish | Baseline Finish |
|----|------------|--|------------|--------------|----------------|---------------|-----------------|
| 1  | <b>0</b>   | <b>BNL ISM/Safety Improvement Project</b>  | <b>34%</b> | Mon 12/12/05 | Mon 5/1/06     | NA            | Tue 8/19/08     |
| 2  | <b>1.0</b> | <b>Institutional Feedback &amp; Performance Improvement Initiatives</b>  | <b>25%</b> | Wed 3/1/06   | Mon 5/1/06     | NA            | Fri 11/2/07     |
| 3  | <b>1.1</b> | <b>Laboratory Strategy-Focused Framework</b>   | <b>22%</b> | Mon 5/1/06   | Mon 5/1/06     | NA            | Wed 4/25/07     |
| 4  | 1.1.1      | Complete initial SFA Planning and Performance Management Documents -- Start and Kickoff Parallel Task/Activities   | 40%        | Mon 5/1/06   | Mon 5/1/06     | NA            | Wed 8/30/06     |
| 5  | 1.1.2      | Realign Quarterly Institutional Level Reporting Along SFA Framework  | 10%        | Wed 5/3/06   | Mon 10/2/06    | NA            | Fri 12/29/06    |
| 6  | 1.1.3      | Develop and Implement Management Symposia  | 0%         | NA           | Tue 1/2/07     | NA            | Fri 5/25/07     |
| 7  | 1.1.4      | Develop, Publish, and Implement Integrated Planning and Performance Management/Assurance Calendar  | 50%        | Fri 6/2/06   | Fri 7/7/06     | NA            | Sat 9/30/06     |
| 8  | <b>1.2</b> | <b>Institutional Decision Making and Assurance Processes</b>   | <b>42%</b> | Mon 5/1/06   | Mon 5/1/06     | NA            | Wed 6/20/07     |
| 9  | 1.2.1      | Define and Develop SFA Analysis Capability   | 0%         | NA           | Thu 4/26/07    | NA            | Fri 9/28/07     |
| 10 | 1.2.2      | Establish Institutional Prioritization Framework   | 0%         | NA           | Wed 11/29/06   | NA            | Sun 12/31/06    |
| 11 | 1.2.3      | Define and Implement a Contractor Assurance Process  | 85%        | Mon 5/1/06   | Mon 5/1/06     | NA            | Fri 9/29/06     |
| 12 | 1.2.4      | Event/Issues Management Processes  | 45%        | Mon 5/1/06   | Mon 5/1/06     | NA            | Fri 12/29/06    |
| 13 | 1.2.5      | Upgrade/Re-Tool the Assessment Tracking System   | 80%        | Mon 5/1/06   | Mon 5/1/06     | NA            | Fri 2/23/07     |
| 14 | 1.2.6      | Establish Common Institutional Level Data Collection and Reporting Process and Tool  | 0%         | NA           | Fri 12/15/06   | NA            | Fri 3/30/07     |
| 15 | <b>1.3</b> | <b>Align Resource Allocation Processes</b>   | <b>0%</b>  | NA           | Mon 9/18/06    | NA            | Wed 4/4/07      |
| 16 | 1.3.1      | Refine and Redefine Institutional Level Discretionary Allocation Processes Description   | 0%         | NA           | Mon 9/18/06    | NA            | Sun 12/31/06    |
| 17 | 1.3.2      | Define and Implement an Organizational Unit Business Planning Process  | 0%         | NA           | Tue 1/2/07     | NA            | Fri 7/27/07     |
| 18 | 1.3.3      | Integrate Decision and Budget Allocation Processes into Planning and Performance Management/Assurance Calendar   | 0%         | NA           | Tue 1/2/07     | NA            | Fri 5/25/07     |
| 19 | <b>1.4</b> | <b>Verify Sustainability &amp; Effectiveness</b>   | <b>23%</b> | Wed 3/1/06   | Mon 5/1/06     | NA            | Fri 11/2/07     |
| 20 | 1.4.1      | Complete comprehensive gap analysis against key program design input requirements and expectations   | 100%       | Mon 5/15/06  | Tue 6/20/06    | Wed 7/19/06   | Thu 7/20/06     |
| 21 | 1.4.2      | Update Re-Engineering Project Plan as necessary to address gaps identified under WBS Activity 1.4.1  | 75%        | Mon 7/17/06  | Thu 7/20/06    | NA            | Sun 7/30/06     |
| 22 | 1.4.3      | Review and update as necessary middle management and staff R2A2s and Performance Plans/Personal Goals to Reflect Strategy Execution and Assurance  | 22%        | Thu 6/8/06   | Mon 7/9/07     | NA            | Fri 9/28/07     |
| 23 | 1.4.4      | Complete Analysis of the Adequacy of Institutional Commitment to Independent Oversight (third party review)  | 30%        | Wed 3/1/06   | Mon 5/1/06     | NA            | Fri 8/25/06     |
| 24 | 1.4.5      | Review and Refine as Necessary Roles and Practices of Institutional Councils   | 75%        | Mon 6/19/06  | Mon 6/12/06    | NA            | Fri 9/29/06     |
| 25 | 1.4.6      | Review Organizational Roles, Structure, and Resources and Make necessary changes to optimize effectiveness and efficiency of on-going administration of performance Management Processes | 0%         | NA           | Mon 4/2/07     | NA            | Fri 6/29/07     |
| 26 | 1.4.7      | Review and update as necessary Senior Management R2A2s and performance plans/personal goals to reflect strategy execution and assurance  | 0%         | NA           | Mon 8/7/06     | NA            | Fri 9/29/06     |

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| ID | WBS      | Task Name   | % Complete | Actual Start | Baseline Start | Actual Finish | Baseline Finish |
|----|----------|---|------------|--------------|----------------|---------------|-----------------|
| 27 | 1.4.8    | Conduct an effectiveness review of the performance Management Program re-engineering effort   | 0%         | NA           | Mon 6/18/07    | NA            | Fri 11/2/07     |
| 28 | 1.4.9    | Establish and implement a process to verify personnel responsible for managing and performing assurance activities  | 0%         | NA           | Mon 8/6/07     | NA            | Fri 9/28/07     |
| 29 | 2.0      | <b>Work Planning &amp; Control Performance Improvement Initiatives</b>  | 24%        | Wed 3/15/06  | Mon 5/1/06     | NA            | Mon 12/11/06    |
| 30 | 2.1      | <b>Work Performance Improvement Initiatives</b>   | 25%        | Wed 3/15/06  | Mon 5/1/06     | NA            | Mon 12/11/06    |
| 31 | 2.1.1    | <b>Integrate Work Planning &amp; Control into the Laboratory's Strategic Planning Process</b>   | 100%       | Mon 5/15/06  | Mon 5/22/06    | Fri 6/9/06    | Mon 6/19/06     |
| 32 | 2.1.1.1  | Assign a work planning and control representative to the ESS&H SFA Team   | 100%       | Mon 5/15/06  | Mon 5/22/06    | Fri 5/26/06   | Mon 5/29/06     |
| 33 | 2.1.1.2  | Incorporate a strong commitment to work planning & control into the SFA goals and objective for the ESS&H SFA   | 100%       | Mon 6/5/06   | Fri 6/9/06     | Fri 6/9/06    | Mon 6/19/06     |
| 34 | 2.1.2    | <b>Create a Culture of "All Work is Planned" and Supporting Procedures and Methodologies</b>  | 5%         | Mon 5/15/06  | Mon 5/22/06    | NA            | Thu 11/2/06     |
| 35 | 2.1.2.1  | Revise current work planning & control processes to reverse the bias towards skill of the worker determinations. Clarify when skill of the Worker may be used.  | 10%        | Mon 5/15/06  | Mon 5/29/06    | NA            | Wed 7/19/06     |
| 36 | 2.1.2.2  | Develop a criteria to clarify when skill of the worker may be used  | 5%         | Mon 5/15/06  | Mon 5/22/06    | NA            | Wed 7/19/06     |
| 37 | 2.1.2.3  | Integrate hazards analysis requirements into Skill of the Worker determinations   | 5%         | Mon 5/15/06  | Mon 5/22/06    | NA            | Wed 7/19/06     |
| 38 | 2.1.2.4  | Develop a process to communicate hazards to workers for skill of the worker jobs  | 5%         | Thu 6/29/06  | Thu 7/6/06     | NA            | Wed 7/19/06     |
| 39 | 2.1.2.5  | Develop a process to fully integrate Job Risk Analyses and Facility Risk Analyses into the Work Planning & Control Process  | 5%         | Mon 5/15/06  | Mon 5/29/06    | NA            | Wed 8/2/06      |
| 40 | 2.1.2.6  | Improve processes for hazards analysis and mitigation where multiple hazards exist and interact; e.g. multi-craft jobs  | 5%         | Thu 6/29/06  | Thu 7/20/06    | NA            | Wed 8/30/06     |
| 41 | 2.1.2.7  | Develop intermediate work planning methodologies to bridge the gap between skill of the worker and the formal work permit   | 5%         | Mon 5/22/06  | Mon 5/22/06    | NA            | Wed 7/26/06     |
| 42 | 2.1.2.8  | Integrate Lessons-Learned data into all Work Planning & Control processes   | 1%         | Tue 6/27/06  | Mon 6/26/06    | NA            | Wed 7/19/06     |
| 43 | 2.1.2.9  | Develop requirements for consideration of multiple hazards and their interaction  | 1%         | Thu 6/29/06  | Thu 7/27/06    | NA            | Wed 8/30/06     |
| 44 | 2.1.2.10 | Revise the Work Planning & Control Management System and Subject Area as appropriate  | 5%         | Fri 6/16/06  | Thu 8/31/06    | NA            | Thu 11/2/06     |
| 45 | 2.1.3    | <b>Clarify Building Manager Role in Work Planning &amp; Control</b>   | 86%        | Mon 5/1/06   | Mon 5/1/06     | NA            | Thu 11/2/06     |
| 46 | 2.1.3.1  | Evaluate the data collected from the Bldg Manager work notification pilot and use the results to define the role of the Bldg Manager in WP&C, specifically the required interaction between Bldg Manager & WCM. | 95%        | Mon 5/1/06   | Mon 5/1/06     | NA            | Wed 7/12/06     |
| 47 | 2.1.3.2  | Revise the WP&C Management System Description and Subject Area as appropriate   | 0%         | NA           | Fri 10/27/06   | NA            | Thu 11/2/06     |
| 48 | 2.1.4    | <b>Address Gaps in ISM Flow down Processes for Subcontractors and Vendors</b>   | 83%        | Wed 3/15/06  | Mon 5/1/06     | NA            | Thu 11/2/06     |
| 49 | 2.1.4.1  | Supplement existing ISM requirements flow-down procurement processes to include small contracts, service work, and warranty work where actual work is performed on site   | 100%       | Wed 3/15/06  | Mon 5/1/06     | Thu 6/8/06    | Fri 6/2/06      |

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| ID | WBS          | Task Name  | % Complete | Actual Start       | Baseline Start     | Actual Finish | Baseline Finish     |
|----|--------------|--|------------|--------------------|--------------------|---------------|---------------------|
| 50 | 2.1.4.2      | Modify contract, purchase order, and other procurement terms and conditions  | 100%       | Mon 5/15/06        | Mon 6/5/06         | Fri 7/7/06    | Mon 6/19/06         |
| 51 | 2.1.4.3      | Integrate review and approval of web requisitions by WCMs and/or Coordinators where work is to be performed on-site. Provide training on the new process and implement/go live | 75%        | Mon 5/15/06        | Tue 6/20/06        | NA            | Thu 7/20/06         |
| 52 | 2.1.4.4      | Revise the WP&C Management System Description and Subject Area as appropriate  | 0%         | NA                 | Fri 10/27/06       | NA            | Thu 11/2/06         |
| 53 | <b>2.1.5</b> | <b>Work Planning Processes for Job Change Control</b>  | <b>28%</b> | <b>Mon 5/15/06</b> | <b>Mon 5/29/06</b> | <b>NA</b>     | <b>Thu 11/2/06</b>  |
| 54 | 2.1.5.1      | Develop procedures for addressing "scope creep" or changes in the work after the completion of initial planning  | 50%        | Mon 5/15/06        | Mon 5/29/06        | NA            | Wed 7/26/06         |
| 55 | 2.1.5.2      | Pilot the new procedures and revise based on the pilot results   | 0%         | NA                 | Thu 7/27/06        | NA            | Thu 9/7/06          |
| 56 | 2.1.5.3      | Revise the WP&C Management System Description and Subject Area as appropriate  | 0%         | NA                 | Wed 11/1/06        | NA            | Thu 11/2/06         |
| 57 | <b>2.1.6</b> | <b>Upgrade Work Planning &amp; Control Management System Assessment Plan</b>   | <b>2%</b>  | <b>Mon 5/15/06</b> | <b>Fri 11/3/06</b> | <b>NA</b>     | <b>Mon 12/11/06</b> |
| 58 | 2.1.6.1      | Define success factors for the WP&C Management System  | 0%         | NA                 | Fri 11/3/06        | NA            | Thu 11/9/06         |
| 59 | 2.1.6.2      | Define the risks associated with the management system   | 0%         | NA                 | Fri 11/3/06        | NA            | Thu 11/9/06         |
| 60 | 2.1.6.3      | Identify quantitative measures to track and report management system performance   | 0%         | NA                 | Fri 11/10/06       | NA            | Mon 11/27/06        |
| 61 | 2.1.6.4      | Incorporate measures into quarterly reporting of management system status as part of Contractor and Corporate Assurance  | 5%         | Mon 5/15/06        | Tue 11/28/06       | NA            | Mon 12/11/06        |
| 62 | 2.1.6.5      | Formalize the role of WCMs quarterly feedback session in management system assessment and improvement planning   | 5%         | Mon 5/15/06        | Fri 11/17/06       | NA            | Mon 11/27/06        |
| 63 | 2.1.6.6      | Update the WP&C Assessment Tool  | 0%         | NA                 | Tue 11/28/06       | NA            | Mon 12/4/06         |
| 64 | <b>2.1.7</b> | <b>Integrate Human Performance Factors Principles into the Work Planning and Control Management System</b>   | <b>3%</b>  | <b>Fri 7/21/06</b> | <b>Thu 7/27/06</b> | <b>NA</b>     | <b>Thu 11/2/06</b>  |
| 65 | 2.1.7.1      | Integrate the "Four Key Questions" into the Pre-Job briefing process   | 5%         | Fri 7/21/06        | Thu 7/27/06        | NA            | Wed 8/30/06         |
| 66 | 2.1.7.2      | Develop an approach to include error precursors in the hazards analysis process  | 5%         | Mon 7/24/06        | Thu 7/27/06        | NA            | Wed 8/30/06         |
| 67 | 2.1.7.3      | Develop and provide longer term recommendations for a more comprehensive integration process to the MS Steward   | 0%         | NA                 | Thu 8/31/06        | NA            | Thu 10/5/06         |
| 68 | 2.1.7.4      | Revise the WP&C Management System Description and Subject Area as appropriate  | 0%         | NA                 | Fri 10/27/06       | NA            | Thu 11/2/06         |
| 69 | <b>2.2</b>   | <b>Work Planning and Control Qualification/Training</b>  | <b>19%</b> | <b>Mon 5/1/06</b>  | <b>Mon 5/1/06</b>  | <b>NA</b>     | <b>Fri 11/17/06</b> |
| 70 | <b>2.2.1</b> | <b>Upgrade Work Control Manager and Coordinator Training &amp; Qualifications</b>  | <b>38%</b> | <b>Mon 5/1/06</b>  | <b>Mon 5/1/06</b>  | <b>NA</b>     | <b>Thu 11/2/06</b>  |
| 71 | 2.2.1.1      | Review Current training & qualifications requirements for Work Control Managers and Work Control Coordinators  | 100%       | Mon 5/1/06         | Mon 5/1/06         | Mon 6/12/06   | Mon 6/12/06         |
| 72 | 2.2.1.2      | Revise Existing training and add new requirements as appropriate   | 25%        | Mon 5/15/06        | Tue 6/13/06        | NA            | Thu 8/10/06         |
| 73 | 2.2.1.3      | Develop a schedule for re-qualifying Work Control Managers and Coordinators through training & testing   | 0%         | NA                 | Fri 8/11/06        | NA            | Fri 9/8/06          |
| 74 | 2.2.1.4      | Update the Work Planning & Control Management System and Subject Areas, and Job Training Assessment (JTA) as applicable  | 0%         | NA                 | Tue 10/17/06       | NA            | Thu 11/2/06         |



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|----|---------|---|------------|--------------|----------------|---------------|-----------------|
| 75 | 2.2.2   | <b>Revitalize the Training Program for Work Control Managers &amp; Work Control Coordinators</b>  | 0%         | NA           | Fri 8/11/06    | NA            | Fri 11/17/06    |
| 76 | 2.2.2.1 | Develop a classroom training curriculum that offers scenario-based, or "case study" training  | 0%         | NA           | Fri 8/11/06    | NA            | Fri 9/15/06     |
| 77 | 2.2.2.2 | Add to or enhance the following elements of the training program (screening work, preparing work permits, performing job hazard analyses, job walk-down and job review, pre and post-job briefing, & soliciting worker feedback | 0%         | NA           | Fri 8/18/06    | NA            | Fri 9/15/06     |
| 78 | 2.2.2.3 | Upgrade the computer (web) based training to incorporate case studies   | 0%         | NA           | Mon 9/18/06    | NA            | Fri 10/27/06    |
| 79 | 2.2.2.4 | Institute learning validation through testing   | 0%         | NA           | Mon 10/30/06   | NA            | Fri 11/17/06    |
| 80 | 2.2.2.5 | Incorporate training program changes into the Work Planning & Control Management System Description and Subject Areas as applicable   | 0%         | NA           | Fri 10/27/06   | NA            | Thu 11/2/06     |
| 81 | 2.2.2.6 | Incorporate all changes resulting from corrective actions in this plan in the revised WCM/WCC training/re-training as applicable  | 0%         | NA           | Fri 10/27/06   | NA            | Fri 11/3/06     |
| 82 | 3.0     | <b>Documentation Improvement Initiatives</b>  | 36%        | Mon 12/12/05 | Mon 5/1/06     | NA            | Tue 8/5/08      |
| 83 | 3.1     | <b>Key Programmatic Document Initiatives</b>  | 55%        | Wed 2/1/06   | Mon 5/1/06     | NA            | Fri 1/12/07     |
| 84 | 3.1.1   | <b>Consolidate three ISM Related Management Systems; Upgrade Program Description</b>  | 24%        | Mon 5/1/06   | Mon 5/1/06     | NA            | Fri 1/12/07     |
| 85 | 3.1.1.1 | Consolidate ISM Related Management Systems; Upgrade ISM Program Description   | 30%        | Mon 5/1/06   | Mon 5/1/06     | NA            | Thu 11/16/06    |
| 86 | 3.1.1.2 | Designate a single point of contact for the new management system   | 0%         | NA           | Fri 11/17/06   | NA            | Mon 11/27/06    |
| 87 | 3.1.1.3 | Develop a presentation to actively communicate the significant changes resulting from this consolidation  | 0%         | NA           | Tue 11/28/06   | NA            | Fri 1/12/07     |
| 88 | 3.1.2   | Incorporate Annual ISM Documentation Review into Lab Planning & Assessment  | 0%         | NA           | Mon 9/25/06    | NA            | Sat 9/30/06     |
| 89 | 3.1.3   | <b>Correct specific Procedure Deficiencies from Evaluation of ISM Assessment</b>  | 61%        | Wed 2/1/06   | Mon 5/1/06     | NA            | Thu 11/9/06     |
| 90 | 3.1.3.1 | Review Evaluation of ISM Report and capture all references to documentation/procedure deficiencies  | 100%       | Wed 2/1/06   | Mon 5/1/06     | Fri 5/5/06    | Mon 8/7/06      |
| 91 | 3.1.3.2 | Distribute deficiencies to appropriate management system stewards for correction  | 100%       | Mon 2/20/06  | Tue 8/8/06     | Fri 6/2/06    | Wed 8/16/06     |
| 92 | 3.1.3.3 | Submit Notice of Intent (NOI) to the SBMS Office & Publish corrections in SBMS  | 2%         | Fri 6/30/06  | Thu 8/17/06    | NA            | Thu 11/9/06     |
| 93 | 3.1.4   | <b>Realign Management System Steward Reporting Structure</b>  | 32%        | Mon 5/1/06   | Mon 5/1/06     | NA            | Mon 9/11/06     |
| 94 | 3.1.4.1 | Revise appropriate SBMS documentation to reflect new reporting relationship   | 80%        | Mon 5/1/06   | Mon 5/1/06     | NA            | Tue 8/1/06      |
| 95 | 3.1.4.2 | Brief Laboratory Director and Deputy Director for Science on their new responsibilities   | 75%        | Fri 7/21/06  | Thu 7/27/06    | NA            | Fri 7/28/06     |
| 96 | 3.1.4.3 | Revise R2A2s for the Deputy Director for Operations, Deputy Director for Science and Laboratory Director to reflect new responsibilities  | 0%         | NA           | Mon 7/31/06    | NA            | Mon 9/11/06     |
| 97 | 3.1.5   | <b>Roll- up Roles and Responsibilities to Management System Level; Include Management System Stewards and Points of Contact</b>   | 80%        | Wed 5/3/06   | Mon 5/22/06    | NA            | Thu 11/9/06     |

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|-----|----------------|---|-------------|---------------------|--------------------|--------------------|---------------------|
| 98  | 3.1.5.1        | Revise SBMS Document guidelines to incorporate a requirement that all roles and responsibilities in any management system documents be summarized in the management system description          | 100%        | Wed 5/3/06          | Fri 9/29/06        | Fri 5/18/07        | Thu 10/26/06        |
| 99  | 3.1.5.2        | Search all SBMS documents to identify all such roles and responsibilities   | 100%        | Thu 6/1/06          | Mon 5/22/06        | Tue 1/2/07         | Wed 8/2/06          |
| 100 | 3.1.5.3        | Update management system descriptions as appropriate  | 2%          | Wed 7/5/06          | Mon 8/7/06         | NA                 | Fri 8/25/06         |
| 101 | 3.1.5.4        | Summarize management system responsibilities by position  | 70%         | Thu 6/1/06          | Mon 8/28/06        | NA                 | Thu 9/28/06         |
| 102 | 3.1.5.5        | Deliver to the Laboratory DDO the incorporation of responsibilities in MSS and Point of Contact R2A2s   | 0%          | NA                  | Fri 9/29/06        | NA                 | Thu 11/9/06         |
| 103 | <b>3.2</b>     | <b>Requirements Management Implementation</b>   | <b>22%</b>  | <b>Mon 12/12/05</b> | <b>Mon 5/1/06</b>  | <b>NA</b>          | <b>Tue 8/5/08</b>   |
| 104 | <b>3.2.1</b>   | <b>Complete the SBMS Requirements Management Process</b>  | <b>24%</b>  | <b>Mon 12/12/05</b> | <b>Mon 5/1/06</b>  | <b>NA</b>          | <b>Tue 8/5/08</b>   |
| 105 | <b>3.2.1.1</b> | <b>Develop software tools to facilitate and document the requirements management process requirements management</b>  | <b>77%</b>  | <b>Mon 12/12/05</b> | <b>Mon 5/1/06</b>  | <b>NA</b>          | <b>Mon 1/22/07</b>  |
| 106 | 3.2.1.2        | Pilot the requirements management process and prepare guidelines for management system stewards   | 3%          | Mon 5/1/06          | Mon 5/1/06         | NA                 | Tue 5/1/07          |
| 107 | 3.2.1.3        | Bin management systems into four phases based on institutional risk impact  | 100%        | Mon 5/15/06         | Wed 5/2/07         | Fri 5/19/06        | Tue 10/16/07        |
| 108 | 3.2.1.4        | Train management system stewards in the requirements management tools and processes   | 0%          | NA                  | Wed 10/17/07       | NA                 | Tue 11/27/07        |
| 109 | 3.2.1.5        | Execute the requirements process in phases based on the binning activity  | 7%          | Mon 5/15/06         | Wed 10/17/07       | NA                 | Tue 5/27/08         |
| 110 | 3.2.1.6        | Publish revised SBMS Documents as applicable  | 0%          | NA                  | Wed 5/28/08        | NA                 | Tue 8/5/08          |
| 111 | <b>3.2.2</b>   | <b>Re-baseline and Finish the SBMS Completion Project</b>   | <b>13%</b>  | <b>Fri 5/26/06</b>  | <b>Thu 6/1/06</b>  | <b>NA</b>          | <b>Fri 12/29/06</b> |
| 112 | 3.2.2.1        | Update the SBMS Completion Project Scope, responsibilities, and schedules   | 52%         | Fri 5/26/06         | Thu 6/1/06         | NA                 | Fri 8/18/06         |
| 113 | 3.2.2.2        | Secure commitment of contributed and/or incremental resources   | 2%          | Mon 5/29/06         | Thu 6/1/06         | NA                 | Fri 8/25/06         |
| 114 | 3.2.2.3        | Complete SBMS Project   | 0%          | NA                  | Mon 8/21/06        | NA                 | Fri 12/29/06        |
| 115 | <b>4.0</b>     | <b>Communication &amp; Involvement Initiatives</b>  | <b>48%</b>  | <b>Wed 3/1/06</b>   | <b>Mon 5/1/06</b>  | <b>NA</b>          | <b>Mon 1/8/07</b>   |
| 116 | <b>4.1</b>     | <b>New / Revised Document Communications</b>  | <b>48%</b>  | <b>Wed 3/1/06</b>   | <b>Mon 5/1/06</b>  | <b>NA</b>          | <b>Mon 1/8/07</b>   |
| 117 | 4.1.1          | Communicate Revisions and Work Control Requirements   | 0%          | NA                  | Wed 12/6/06        | NA                 | Mon 1/8/07          |
| 118 | 4.1.2          | ISM Operations Communications   | 75%         | Wed 3/1/06          | Mon 5/1/06         | NA                 | Mon 8/28/06         |
| 119 | <b>4.1.3</b>   | <b>Operations Forum Evaluation / Implementation</b>   | <b>63%</b>  | <b>Wed 3/1/06</b>   | <b>Wed 6/28/06</b> | <b>NA</b>          | <b>Fri 2/9/07</b>   |
| 120 | 4.1.4          | Worker Safety and Health / ISM Consolidated Management System   | 0%          | NA                  | Mon 11/6/06        | NA                 | Tue 12/5/06         |
| 121 | <b>5.0</b>     | <b>Collider Accelerator Arc Flash Type B Incident</b>   | <b>39%</b>  | <b>Mon 5/1/06</b>   | <b>Mon 5/1/06</b>  | <b>NA</b>          | <b>Mon 4/30/07</b>  |
| 122 | <b>5.1</b>     | <b>DOE Type B Team Interim Recommendations</b>  | <b>46%</b>  | <b>Mon 5/1/06</b>   | <b>Mon 5/1/06</b>  | <b>NA</b>          | <b>Mon 4/30/07</b>  |
| 123 | <b>5.1.1</b>   | <b>Doe Team Interim Recommendation #1 -- Dress for Hazard Category for 480v circuit breaker and switch operation. Interim action to remain in place until Laboratory actions are completed.</b> | <b>100%</b> | <b>Mon 5/1/06</b>   | <b>Mon 5/1/06</b>  | <b>Mon 7/24/06</b> | <b>Thu 9/28/06</b>  |
| 124 | 5.1.1.1        | Lab Action #1 Review the NFPA 70E standards and review their adequacy for personal protective equipment   | 100%        | Mon 5/1/06          | Mon 5/1/06         | Fri 7/7/06         | Thu 9/7/06          |

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|-----|--------------|--|------------|--------------------|-------------------|---------------|--------------------|
| 125 | 5.1.1.2      | Lab action #2 Upgrade the Laboratory Electrical Safety Standards to better address arc flash personal protective equipment   | 100%       | Mon 5/1/06         | Mon 5/1/06        | Fri 7/21/06   | Thu 9/7/06         |
| 126 | 5.1.1.3      | Publish upgraded standard in SBMS or local procedures as appropriate   | 100%       | Fri 7/7/06         | Fri 9/8/06        | Mon 7/24/06   | Thu 9/28/06        |
| 127 | <b>5.1.2</b> | <b>DOE Team Interim Recommendation #2 -- Review the practice of racking circuit breakers with bus energized or inserting/removing MCC starter buckets while MCC is energized</b> | <b>63%</b> | <b>Mon 5/1/06</b>  | <b>Mon 5/1/06</b> | <b>NA</b>     | <b>Fri 7/28/06</b> |
| 128 | 5.1.2.1      | Lab Action #1 Review current procedures to evaluate whether the practice of racking circuit breakers into live bus should be continued   | 100%       | Mon 5/1/06         | Mon 5/1/06        | Mon 7/24/06   | Fri 6/16/06        |
| 129 | 5.1.2.2      | Lab Action #2 Benchmark practices for MCC bucket insertion/removal with other Laboratory Electrical Safety Standards   | 100%       | Mon 5/22/06        | Mon 6/5/06        | Mon 7/24/06   | Fri 6/16/06        |
| 130 | 5.1.2.3      | Lab Action #3 Modify lab procedures and publish in SBMS and/or local procedures as appropriate   | 10%        | Mon 7/24/06        | Mon 6/19/06       | NA            | Wed 7/12/06        |
| 131 | 5.1.2.4      | Lab Action #4 Train/Communicate Laboratory electrical workers in the updated procedures  | 0%         | NA                 | Thu 7/13/06       | NA            | Fri 7/28/06        |
| 132 | <b>5.1.3</b> | <b>DOE Team Interim Recommendation #3 -- Activate/Install ground fault detection systems</b>   | <b>24%</b> | <b>Mon 7/24/06</b> | <b>Mon 5/1/06</b> | <b>NA</b>     | <b>Mon 4/30/07</b> |
| 133 | 5.1.3.1      | Lab Action #1 Review the status of ground fault indicating relays to verify that they are appropriately set and connected to an alarm monitoring system                          | 85%        | Mon 7/24/06        | Mon 5/1/06        | NA            | Thu 9/21/06        |
| 134 | 5.1.3.2      | Lab Action #2 Install/correct/connect relays as needed   | 20%        | Mon 7/24/06        | Fri 9/22/06       | NA            | Tue 3/13/07        |
| 135 | 5.1.3.3      | Lab Action #3 Develop/Review procedures for responding to ground fault conditions  | 0%         | NA                 | Fri 9/22/06       | NA            | Thu 10/19/06       |
| 136 | 5.1.3.4      | Lab Action #4 Modify the Laboratory Electrical Safety Standards, if applicable   | 0%         | NA                 | Wed 3/14/07       | NA            | Mon 4/30/07        |
| 137 | 5.1.3.5      | Train the Laboratory's electrical workers in updated procedures  | 0%         | NA                 | Tue 4/24/07       | NA            | Fri 6/8/07         |
| 138 | <b>5.1.4</b> | <b>DOE Team Interim Recommendation #4 -- Install systems to minimize voltage transients on undergrounded (floating delta) systems</b>  | <b>48%</b> | <b>Mon 5/1/06</b>  | <b>Mon 5/1/06</b> | <b>NA</b>     | <b>Thu 9/7/06</b>  |
| 139 | 5.1.4.1      | Lab Action #1 Conduct further electrical and mechanical forensic analysis to confirm the DOE Team's theory of what caused the arc flash event                                    | 100%       | Mon 5/1/06         | Mon 5/1/06        | Wed 7/12/06   | Fri 6/2/06         |
| 140 | 5.1.4.2      | Lab Action #2 Design protection systems based on a full understanding of the technical cause   | 100%       | Thu 7/6/06         | Mon 6/5/06        | Wed 7/26/06   | Fri 6/23/06        |
| 141 | 5.1.4.3      | Lab Action #3 Develop a plan for installing systems (a revised completion date for completion of electrical installation will be provided upon plan completion)                  | 25%        | Mon 5/1/06         | Mon 5/1/06        | NA            | Thu 9/7/06         |
| 142 | <b>5.1.5</b> | <b>DOE Team Interim Recommendation #5 -- Develop and implement a project plan for incident energy calculations</b>   | <b>70%</b> | <b>Mon 5/1/06</b>  | <b>Mon 5/1/06</b> | <b>NA</b>     | <b>Wed 7/26/06</b> |
| 143 | 5.1.5.1      | Lab Action #1 Develop a project Plan for remaining calculation of the arc flash's incident energy calculations   | 100%       | Mon 5/1/06         | Mon 5/1/06        | Mon 7/24/06   | Fri 6/23/06        |
| 144 | 5.1.5.2      | Lab Action #2 Implement the plan - (A revised completion date for completion of incident calculations will be provided upon completion of the plan)                              | 20%        | Fri 7/7/06         | Mon 6/26/06       | NA            | Wed 7/26/06        |
| 145 | <b>5.1.6</b> | <b>DOE Team Interim Recommendation #6 -- Assure that Personal Protective Equipment Is Worn Properly</b>  | <b>20%</b> | <b>Mon 5/1/06</b>  | <b>Mon 5/1/06</b> | <b>NA</b>     | <b>Fri 9/29/06</b> |

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|-----|--------------|---|------------|--------------------|--------------------|---------------|---------------------|
| 146 | 5.1.6.1      | Lab Action #1 Review current practices for use of personal protective equipment   | 44%        | Mon 5/1/06         | Mon 5/1/06         | NA            | Fri 6/30/06         |
| 147 | 5.1.6.2      | Lab Action #2 Include the wearing of PPE wear as an item in upcoming negotiations with the IBEW   | 100%       | Mon 6/12/06        | Thu 7/6/06         | Tue 6/13/06   | Mon 7/10/06         |
| 148 | 5.1.6.3      | Lab Action #3 Develop an enforcement plan for the uniform Laboratory standard and practice on wearing of PPE  | 0%         | NA                 | Thu 7/6/06         | NA            | Fri 9/29/06         |
| 149 | <b>5.2</b>   | <b>BNL Arc Flash Corrective Actions</b>   | <b>11%</b> | <b>Mon 5/8/06</b>  | <b>Mon 5/15/06</b> | <b>NA</b>     | <b>Mon 11/20/06</b> |
| 150 | 5.2.1        | Human Performance -Based Accident Investigation   | 100%       | Mon 5/8/06         | Mon 5/15/06        | Tue 5/23/06   | Wed 5/31/06         |
| 151 | 5.2.2        | Electrical Safety Assessment  | 0%         | NA                 | Wed 6/28/06        | NA            | Mon 11/20/06        |
| 152 | 5.2.3        | Electrical Safety Effectiveness Review  | 10%        | Mon 6/26/06        | Wed 6/28/06        | NA            | Fri 8/25/06         |
| 153 | 5.2.4        | Lessons Learned Review  | 20%        | Mon 5/29/06        | Mon 8/28/06        | NA            | Tue 9/5/06          |
| 154 | <b>6.0</b>   | <b>Ongoing Action Plan Tracking/Follow-Up</b>   | <b>59%</b> | <b>Wed 3/1/06</b>  | <b>Mon 5/1/06</b>  | <b>NA</b>     | <b>Fri 12/28/07</b> |
| 155 | 6.1          | OSHA Assessment Action Plan   | 100%       | Mon 5/1/06         | Mon 5/1/06         | Fri 5/12/06   | Fri 7/28/06         |
| 156 | 6.2          | Material Handling & Rigging Plan (ATS 1948)   | 85%        | Mon 5/15/06        | Mon 3/5/07         | NA            | Fri 4/27/07         |
| 157 | 6.3          | Industrial Hygiene Plan (ATS 2823)  | 60%        | Wed 3/1/06         | Wed 5/24/06        | NA            | Thu 2/15/07         |
| 158 | 6.4          | Electrical Safety Action Plan (ATS 2725)  | 50%        | Mon 5/1/06         | Mon 6/18/07        | NA            | Fri 12/28/07        |
| 159 | 6.5          | Authority Having Jurisdiction (AHJ) Nationally Recognized Testing Laboratory (NTRL) Action Plan   | 35%        | Mon 5/15/06        | Mon 5/14/07        | NA            | Sun 9/30/07         |
| 160 | 6.6          | Inadequate Control of Procedures (ATS 2935)   | 100%       | Wed 3/1/06         | Wed 7/12/06        | Fri 7/28/06   | Wed 11/1/06         |
| 161 | <b>7.0</b>   | <b>Evaluation of ISM Recommendations &amp; Improvement Initiatives</b>  | <b>38%</b> | <b>Wed 3/1/06</b>  | <b>Mon 5/1/06</b>  | <b>NA</b>     | <b>Tue 2/13/07</b>  |
| 162 | <b>7.1</b>   | <b>Evaluation of ISM Recommendations/Opportunities for Improvement</b>  | <b>41%</b> | <b>Wed 3/1/06</b>  | <b>Mon 5/1/06</b>  | <b>NA</b>     | <b>Fri 12/29/06</b> |
| 163 | <b>7.1.1</b> | <b>Radiological Protection Plan Revision</b>  | <b>20%</b> | <b>Mon 5/15/06</b> | <b>Tue 8/1/06</b>  | <b>NA</b>     | <b>Fri 9/29/06</b>  |
| 164 | 7.1.1.1      | Revise the RPP scope statement to clarify the requirements of 10CFR835 for off-site radiological work   | 25%        | Mon 5/15/06        | Tue 8/1/06         | NA            | Tue 9/19/06         |
| 165 | 7.1.1.2      | Communicate RPP requirements to applicable Managers & Staff   | 0%         | NA                 | Wed 9/20/06        | NA            | Fri 9/29/06         |
| 166 | 7.1.2        | Radiological Awareness Report (RAR) Performance Expectations  | 100%       | Wed 3/1/06         | Tue 8/1/06         | Fri 3/31/06   | Thu 8/3/06          |
| 167 | 7.1.3        | Waste Management Representative Support Services Evaluation   | 100%       | Wed 3/1/06         | Tue 8/1/06         | Tue 4/25/06   | Tue 9/26/06         |
| 168 | 7.1.4        | Life Sciences Safety Culture/Performance Expectations   | 100%       | Wed 3/1/06         | Tue 8/1/06         | Fri 3/31/06   | Mon 8/14/06         |
| 169 | <b>7.1.5</b> | <b>Conduct of Operations Evaluation and Implementation</b>  | <b>23%</b> | <b>Wed 3/1/06</b>  | <b>Mon 5/1/06</b>  | <b>NA</b>     | <b>Mon 11/6/06</b>  |
| 170 | 7.1.5.1      | Facilities & Operations Directorate perform an extent of condition review to determine if conduct of operation noncompliance exists across operational facilities | 40%        | Mon 5/1/06         | Mon 5/1/06         | NA            | Wed 7/12/06         |
| 171 | 7.1.5.2      | Internal Audit and Oversight perform an effectiveness review of all corrective actions for the findings from the August 2003 IO Assessment                        | 0%         | NA                 | Mon 9/4/06         | NA            | Mon 11/6/06         |
| 172 | 7.1.5.3      | Review/Update existing F&O Directorate Conduct of Operations Program  | 45%        | Wed 3/1/06         | Thu 7/13/06        | NA            | Wed 8/23/06         |

## BNL ISM/Safety Improvement Project Plan (ATS# 2944)

| ID  | WBS            | Task Name  | % Complete | Actual Start       | Baseline Start     | Actual Finish | Baseline Finish     |
|-----|----------------|--|------------|--------------------|--------------------|---------------|---------------------|
| 173 | 7.1.5.4        | Provide awareness training to applicable F&O staff on conduct of operations principles, program revisions, and management expectations                                   | 0%         | NA                 | Thu 8/24/06        | NA            | Thu 9/21/06         |
| 174 | <b>7.1.6</b>   | <b>Nuclear Safety Authorization / Readiness</b>  | <b>58%</b> | <b>Mon 4/3/06</b>  | <b>Mon 7/3/06</b>  | <b>NA</b>     | <b>Wed 11/29/06</b> |
| 175 | 7.1.6.1        | Perform a verification of implementation and compliance with 10CFR830, Subpart B Nuclear Safety Management   | 100%       | Mon 4/3/06         | Mon 7/3/06         | Fri 7/7/06    | Thu 9/28/06         |
| 176 | 7.1.6.2        | Perform an assessment of documented safety bases or pertinent exclusions/Exemptions  | 0%         | NA                 | Fri 9/29/06        | NA            | Thu 11/9/06         |
| 177 | 7.1.6.3        | Provide Unreviewed Safety Question determination training to managers and staff responsible for nuclear facilities   | 30%        | Thu 7/6/06         | Thu 7/6/06         | NA            | Mon 7/10/06         |
| 178 | 7.1.6.4        | Conduct an external assessment to independently verify Essential Safety System Functionality   | 0%         | NA                 | Fri 11/10/06       | NA            | Wed 11/29/06        |
| 179 | <b>7.1.7</b>   | <b>Operating Experience / Lessons Learned Initiatives</b>  | <b>28%</b> | <b>Mon 5/15/06</b> | <b>Tue 5/30/06</b> | <b>NA</b>     | <b>Fri 12/29/06</b> |
| 180 | 7.1.7.1        | Expand distribution of published lessons learned communications to include Level 1 and Level 2 managers, ES&H Coordinators, WCMs, and Safety & Health Services personnel | 100%       | Mon 5/15/06        | Tue 5/30/06        | Wed 5/31/06   | Fri 6/16/06         |
| 181 | 7.1.7.2        | Commence tracking & trending feedback received on each published Lessons Learned Communication   | 10%        | Mon 6/19/06        | Mon 6/26/06        | NA            | Wed 8/9/06          |
| 182 | <b>7.1.7.3</b> | <b>Initiate a Bi-Annual Lessons Learned Coordinators workshop to prompt feedback, evaluate, and improve the BNL LL program</b>   | <b>0%</b>  | <b>NA</b>          | <b>Wed 12/6/06</b> | <b>NA</b>     | <b>Fri 12/29/06</b> |
| 183 | <b>7.1.8</b>   | <b>Construction Safety Subject Area review/Update</b>  | <b>10%</b> | <b>Mon 3/27/06</b> | <b>Mon 6/12/06</b> | <b>NA</b>     | <b>Thu 9/28/06</b>  |
| 184 | 7.1.8.1        | Perform a comprehensive review of the construction safety subject area, and incorporate improvements and new requirements  | 10%        | Mon 3/27/06        | Mon 6/12/06        | NA            | Thu 9/28/06         |
| 185 | <b>7.2</b>     | <b>Worker Safety &amp; Health Program Implementation</b>   | <b>31%</b> | <b>Mon 5/1/06</b>  | <b>Mon 5/1/06</b>  | <b>NA</b>     | <b>Tue 2/13/07</b>  |
| 186 | <b>7.2.1</b>   | <b>Worker Safety &amp; Health Rule Implementation</b>  | <b>39%</b> | <b>Mon 5/1/06</b>  | <b>Mon 5/1/06</b>  | <b>NA</b>     | <b>Mon 12/4/06</b>  |
| 187 | <b>7.2.2</b>   | <b>Development of Field Validation Criterion</b>   | <b>13%</b> | <b>Mon 5/1/06</b>  | <b>Mon 5/1/06</b>  | <b>NA</b>     | <b>Mon 12/4/06</b>  |
| 188 | <b>7.2.3</b>   | <b>Investigation/Causal Analysis and Corrective Actions</b>  | <b>50%</b> | <b>Mon 5/1/06</b>  | <b>Mon 5/1/06</b>  | <b>NA</b>     | <b>Mon 12/4/06</b>  |
| 189 | 7.2.4          | Worker Safety & Health Elements in Place & Program Expectations Communicated   | 0%         | NA                 | Tue 12/5/06        | NA            | Tue 2/13/07         |
| 190 | <b>7.3</b>     | <b>Safety Improvement Initiatives</b>  | <b>43%</b> | <b>Fri 3/31/06</b> | <b>Wed 5/3/06</b>  | <b>NA</b>     | <b>Fri 12/29/06</b> |
| 191 | <b>7.3.1</b>   | <b>Excellence in ESS&amp;H Strategic Focus Area</b>  | <b>45%</b> | <b>Tue 5/9/06</b>  | <b>Tue 5/9/06</b>  | <b>NA</b>     | <b>Sat 9/30/06</b>  |
| 192 | <b>7.3.2</b>   | <b>Safety Observation Training for Managers and Supervisors</b>  | <b>45%</b> | <b>Tue 5/9/06</b>  | <b>Tue 5/9/06</b>  | <b>NA</b>     | <b>Thu 11/2/06</b>  |
| 193 | <b>7.3.3</b>   | <b>OHSAS Registration Phase 3 Completion</b>   | <b>40%</b> | <b>Fri 3/31/06</b> | <b>Wed 5/3/06</b>  | <b>NA</b>     | <b>Fri 12/29/06</b> |
| 194 | <b>8.0</b>     | <b>Project Management and Support</b>  | <b>18%</b> | <b>Mon 5/1/06</b>  | <b>Mon 5/15/06</b> | <b>NA</b>     | <b>Tue 8/19/08</b>  |
| 195 | 8.1            | Consulting Services & Subject Matter Experts   | 30%        | Mon 5/1/06         | Mon 10/2/06        | NA            | Fri 7/27/07         |
| 196 | <b>8.2</b>     | <b>Administration and ISM Workshops</b>  | <b>15%</b> | <b>Mon 5/1/06</b>  | <b>Mon 5/15/06</b> | <b>NA</b>     | <b>Tue 9/18/07</b>  |
| 197 | <b>8.3</b>     | <b>ISM/Safety Improvement Project Closeout</b>   | <b>0%</b>  | <b>NA</b>          | <b>Wed 8/6/08</b>  | <b>NA</b>     | <b>Tue 8/19/08</b>  |